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**DO STEREOTYPES ABOUT OLDER WORKERS CHANGE?  
EVIDENCE FROM A PANEL STUDY AMONG EMPLOYERS**

By

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# Do Stereotypes about Older Workers Change?

## Evidence from a Panel Study among Employers

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Abstract:

**Background:** Stereotypes of older workers and their productive value are believed to contrast with their actual potential. Still, these stereotypes among employers persist.

**Objective:** This article examines whether managers have changed their views on older workers and if so what the driving forces are of these changes.

**Methods:** Using panel data we examine the changes in attitudes among Dutch managers about the productive skills of older workers (50 years and older) between 2010 and 2013.

**Results:** Managers have adjusted their view of older workers in a significant manner, especially about their so-called soft skills, like reliability and loyalty. Hard skills or qualities - like physical stamina, new tech skills and willingness to train - have not changed. Important drivers behind these changes are the age of the manager – the older the manager the more positive he or she is about older workers – and the experience with older workers in the past two years. Increase in the occurrence of problems with older workers tends to depress their assessment of soft and hard skills. Firm characteristics add little explanatory power.

**Conclusions:** Attitudes are not easily susceptible to change but this study shows that the biggest effects are to be expected from the process of aging itself: older managers tend to have a more positive assessment of the hard and soft skills of older workers.

**Contributions:** The main contribution to the scientific literature of this paper is to see in changes in attitudes of individual managers towards older workers over time and the underlying drivers of change.

## 1. Introduction

Stereotypes are a serious impediment to the prospects of older workers seeking employment on today's labor markets. For instance, age discrimination is one of the most widespread used practices on the labour market in Europe (Eurobarometer, 2015). Of all the possible character traits that a candidate can possess being of 'old' (55 years and older) puts a candidate most strongly at a disadvantage according to European citizens. Employers have been shown to be influenced in making human resource decisions on older workers by the stereotypes they hold about them (Avolio & Barrett, 1987; Chui, Chan, Snape, & Redman, 2001; Van Dalen & Henkens, 2016). For instance, age discrimination may be the result of the belief that job performance decreases with age (Finkelstein, Burke, & Raju, 1995). And the fact that employers have been lukewarm until now in hiring older workers or investing in their human capital may also be seen as a sign of employer's distrust in the capacities of the older worker (Munnell & Sass, 2009; Van Dalen, Henkens, & Schippers, 2010a; Van Dalen, Henkens, & Wang, 2015). There is substantial evidence that most of these stereotypes are not well-founded: chronological age has not been found to be a valid and robust predictor of performance (Bal, Reiss, Rudolph, & Baltes, 2011; Ng & Feldman, 2012; Posthuma & Campion, 2009; Waldman & Avolio, 1986). Policy makers have stressed the need for such changes to occur at the level of employers in order to alleviate the precarious state of older unemployed on the labor market (cf. OECD (2006)) and indeed the concept of active aging is based on getting rid of stereotypes, or as the as the International Council on Active Aging (ICAA) formulates one of its core principles: "Ageism and negative stereotypes of aging impede an inclusive society. To maximize the dividends of population aging, we need to embrace the realities of aging today and leave old ways of thinking behind."

When stereotypes play such a large role in today's labor market, an important question to pose would be: to what extent are age-related stereotypes susceptible to change? And if so, what are the driving forces behind such changes? These questions are the focal point of this paper. We examine the age-related stereotypes of managers over a three-year period and look at whether employers have changed their perceptions of the productive skills of older workers over time. As Harris, Krygsman, Waschenko, and Rudman (2017) make clear from their review on ageism, most studies on stereotypes are of a cross-sectional nature and longitudinal research is called for and this study is, as far as we know, the first to fill up this lacuna. Furthermore, the ideas tested in older papers in the literature on ageism were done in an era in which organizations exhibited a culture of early exit of older workers. At the start of the 21<sup>st</sup>

century this trend towards early retirement has been reversed in quite a number of countries and employers are now encountering employees who retire at a significant later date than before (Blundell, French, & Tetlow, 2016). Now an aging workforce is a reality to be dealt with by employers, the perceptions and attitudes that employers have of older workers may be more in line with reality and hence perhaps also more likely to change.

In this paper we analyze unique longitudinal data on attitudinal changes among Dutch managers with respect to older workers over the period 2010-2013. By measuring attitudes at two points in time and measuring changes at the organizational level, we are not only able to see whether changes of perceptions among managers occur, but also discern possible drivers of change. In this paper we first establish whether there are significant changes in stereotypes of older workers among managers. The second part deals with two specific hypotheses concerning the drivers of change: the age of the manager and the type of contact which a manager has with older workers.

In this paper we present three findings. First of all, based on a longitudinal dataset we discover that managers over relatively short time span (three years) change their stereotypical views of older workers with respect to quite a number of skills of workers in a positive direction. Second, the age of the manager is particularly important in understanding the change over time, next to having contact with older workers. And a third contribution is the finding that the firm context is of little importance in explaining the change over time compared to the characteristics describing the manager making the assessment.

## **2. Theory of age stereotypes**

It is well-established in the academic literature (see Harris et al. (2017); Rupp, Vodanovich, and Crede (2006)) that ageism exists. Employers and employees have perceptions of how certain age groups function within organizations and what their comparative advantages are. People's perceptions enable them to process and order information as effectively as possible. Hilton and Von Hippel describe stereotypes as: "Beliefs about the characteristics, attributes, and behaviors of members of certain groups [...] and beliefs about how and why these attributes go together" (Hilton and Von Hippel, 1996: 240). This definition refers to groups of people. Individuals within a group tend to overestimate the similarities between themselves and members of the same group and underestimate the differences (Linville, Fischer, & Salovey, 1989; Verkuyten & Nekuee, 1999). As a result, differences between groups are perceived to be much greater than they actually are. Stereotyping leads people to be more

inclined to attribute positive characteristics to members of their own group (ingroup bias) and more negative characteristics to members of other groups (outgroup bias) (Lalonde & Gardner, 1989; Tajfel & Turner, 1979). These stereotypes are not necessarily negative, but stereotypes about ‘outgroup’ members tend to be less favorable than those about ‘ingroup’ members (Hilton & Von Hippel, 1996; Tajfel & Turner, 1979).

What is not empirically well-established is whether age stereotypes among individual employers *change over time* and, if so, what triggers these changes. We reflect on a number of possibilities that are conducive to making managers change their general perception of older workers. Employers play a key role in the labor market opportunities of older workers. Employers are assumed to be more focused on whether and how older workers contribute to the various organizational goals. Although gradually more and more information is cumulated on the comparative advantages of workers at various points in their career (Skirbekk, 2004, 2008), research of perceptions of productivity by employers and employees is still rather limited and more so when it comes to studying *changes in perceptions*. The current body of research has shown that older workers are viewed as having both positive and negative attributes compared to younger age groups. Positive characteristics attributed to older employees include experience, loyalty to the organization, reliability and interpersonal skills. Skills such as the acceptance of and the ability to use new technologies and the adjustment to organizational changes are attributed primarily to younger workforce members (cf. Van Dalen, Henkens, and Schippers (2010b))

An obvious factor to consider in explaining these perceptions is the role of age itself. In most studies on ageism one can detect a role of age but these effects are often limited to a cross-sectional setup and studies do not always make a distinction between the perceptions of employees and those of managers/supervisors. The effect of age on a supervisor’s assessment is a priori not clear. For instance, Hassell and Perrewé (1995) found that older supervisors had more negative views of older workers than younger supervisors. They argue that “because supervisors may be ‘older’ themselves, they psychologically may deny membership in that category to protect their work identity and status. Older supervisors may perceive themselves to be contributing and valued members of the organization, thus, they may not want to be viewed as an ‘older’ employee.” (p. 466). In other words, managers keep a distance towards the outgroup of older employees and age does not seem to cause a positive change in attitude.

An alternative mechanism that might give rise to the reverse effect - older supervisors having more positive views of older workers than younger supervisors - is to be found in the field of 'relational demography' where the similarity-attraction paradigm is an important building block (Riordan & Shore, 1997). The greater the similarity between, e.g., a supervisor and his team, the more the supervisor is attracted to his team, a match that is associated with more positive attitudes and experiences. In an early contribution Tsui and O'Reilly (1989) show that "increasing dissimilarity in superior-subordinate demographic characteristics is associated with lower effectiveness as perceived by superiors, less personal attraction on the part of superiors for subordinates". Shore, Cleveland, and Goldberg (2003) show by focusing on the manager-employee dyad that employee satisfaction or commitment is higher when the manager and employee are similar in (chronological) age. The similarity-attraction can also be interpreted in the present study as the prediction that managers who are of similar age of the employees under review will tend to have more positive views of that age group. In our case of assessing the productivity of older workers this would mean that older managers would have a more positive view of the productive capacity of older workers than younger managers.

To explicitly test the possibility of an age effect one needs a longitudinal setup, to see whether the age of a manager plays a role in changing his or her perception of older workers and to what extent. The reason for expecting different responses over the lifetime is because some managers may switch from an outgroup (middle aged) to the ingroup (older workers) and this transition over time is rarely studied in detail. In short, with respect to the importance of age, we formulate the following hypothesis:

*Age in-group hypothesis:* As managers become older, the more positive their assessment of the productive skills of older workers.

A second element in our study is whether contact between managers and older workers has an impact on their view of older workers. It is generally believed that in line with the so-called contact theory contact between members of different groups can reduce intergroup hostility and discrimination (Brown, Condor, Mathews, Wade, & Williams, 1986). For instance, frequent and positive contact of a manager with older workers may disprove existing stereotypes and lead to an upward adjustment of the assessment and the reverse applies to having problems with older workers. However, the literature does not give this optimistic picture. In general, supervisors tend to have a less positive view of how contact can resolve



negative stereotypes. According to a study among three organizations by Hassell and Perrewé (1995) personal contact did not have this assumed positive effect on the beliefs of supervisors about older workers. In another study Henkens (2005) found a positive correlation between contact frequency with older workers and managers' assessment of older workers' productivity. The cross-sectional research design of both studies makes it hard to make any causal inferences. Furthermore, contacts may be either positively evaluated by managers, but also negatively. In this study we present a more refined contact hypothesis which disentangle how contact between managers and older workers is viewed by the managers. In our setup we test the following contact hypothesis:

*Contact hypothesis:* managers who experience an increase in problems with older workers across time are more likely to express an increase in negative stereotypes about older workers' productivity skills compared to employers who experience a decrease or stable level of problematic contacts.

Finally, we control for a number of individual level and organizational level background variables. There is conflicting evidence regarding the influence of gender differences with respect to sensitivity to age differences. While some studies (Snyder & Miene, 1994) report that women are more likely to stereotype older adults than men, most studies find no gender effects (Hummert, Garstka, & Shaner, 1997). In addition we control for education as managers from different educational levels might have a different perceptions of older workers' productivity. At the organizational level, we control for the percentage of higher educated staff, the percentage of workers of 50 years and older, as well as the assessed level of physically demanding work within the firm. The reason for including these factors is that the organizational or sectoral context in which a manager works may affect their assessment of older workers.

### 3. Data and Methods

#### *Data*

To answer the two core research questions – is there a change in attitudes, and if so what drives this change - a specifically designed survey was used to measure attitudes with respect to older workers among managers. We collected our data by accessing the sample of the Longitudinal Internet Studies for the Social Sciences (LISS) of Tilburg University. LISS is an Internet panel that consists of approximately 6,500 individuals. All individuals are selected on the basis of a true probability sample of households drawn from the population register by Statistics Netherlands. For the current study we used a small sample of managers ( $N = 323$ ) between the ages of 30 and 65 (average age being 46 years). The data were collected in April 2010 and in April 2013. The response rate for the 2010 survey was 71 percent and the one carried out in 2013 was 84 percent. Managers in the LISS panel were identified based on their answers to the questions regarding whether they supervise others in their current occupation and whether they had experience of hiring personnel in the past 10 years.

#### *Dependent variables*

Our measures of stereotypes toward older workers builds on an extensive international literature that describes attitudes toward older workers.<sup>1</sup> The measures contain approximately 10 items in which older workers are rated on issues that could be seen as aspects of their labor productivity. In order to extract stereotypical views, the respondents were given a list of 11 characteristics based on the literature presented above for older workers. Each manager is asked to assess to what extent a number of skills apply to employees in general of 50 years of age and older. The list of skills covers the following skills: flexibility, social skills, loyalty, creativity, management skills, reliability, willingness to train, physical stamina, stress resistant and ability to work with new technologies. Managers were asked, “To what extent, in your view, do the following characteristics apply to workers aged 50 years and older?”, with answer categories (1) hardly, (2) somewhat, (3) strongly and (4) very strongly. The age cut-off point of 50 years was chosen because most government (subsidization) programs aimed at

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<sup>1</sup> These studies used a set of attitudinal Likert-type questions that has been developed by P Taylor and Walker (1993), and has been extensively used in the United Kingdom (Loretto, Duncan, & White, 2000; Lyon & Pollard, 1997; Philip Taylor & Walker, 1998), the United States (Wagner & Bonham, 1998), New Zealand (Gray & McGregor, 2003), Hong Kong (Chiu, Chan, Snape, & Redman, 2001), Australia (Schmidt, 2000) and the Netherlands (Henkens, 2005).

stimulating demand for older workers, as well as human resource policies within organizations, refer to older workers as 50 years and older (cf. (OECD, 2006), p. 111).

Because some types of skills are expected to be correlated we will subsequently use a number of factors which summarize the information embodied in these skills. The skills of older workers are split up into so-called soft and hard skills based on earlier research of Van Dalen et al. (2010b). Hard skills are based on the following components: stress resistance, creativity, flexibility, physical stamina, new tech skills and willingness to train. Soft skills are based on the following components: reliability, loyalty, social skills, and management skills. To see whether the current set of skills conforms to such a division into soft and hard skills we have carried out a confirmatory factor analysis for two types of older workers for two periods of observation.

As a first step in the analysis, confirmatory factor analysis (CFA) with categorical indicators was conducted to examine the construct validity of the two types of skills: hard and soft skills. A two-factor model was tested by loading items on their respective latent variables at the two moments measured: wave 1 and 2. Results showed that items all significantly loaded on their respective latent factors (standardized factor loadings ranged from 0.67 to 1.30 (soft skills) and 0.96 to 1.31 (hard skills) and were all statistically significant). Information criteria of the two-factor model were obtained for wave 1: Akaike (AIC) = 6513.2, and Bayesian (BIC) = 6633.2 with RMSE = 0.12; and for wave 2: Akaike (AIC) = 6240.8, and Bayesian (BIC) = 6361.3 with RMSE = 0.12. An alternative one-factor model was specified by loading all ten items on the same latent factor, for wave 1: Akaike (AIC) = 6624.7, and Bayesian (BIC) = 6740.8 with RMSE = 0.15; and for wave 2: Akaike (AIC) = 6297.0, and Bayesian (BIC) = 6413.6 with RMSE = 0.14. Since the two types of information criteria of the two-factor model are smaller than those of the one-factor model, the two-factor model has better model fit and thus was accepted for the further analysis. The constructed alphas for hard skills. The constructed alphas for the scales referring to the hard skills of older workers are 0.78 (wave 1) and 0.75 (wave 2); and for the soft skills 0.81 (wave 1) and 0.71 (wave 2). These are well above conventional levels as mentioned in the literature (Peterson, 1994).

### *Independent variables*

Explaining the soft and hard skills over time for each and every manager we resort to two types of independent variables:

#### (1) Manager characteristics.

These variables refer to the age, education, and gender of the manager and the question whether he/she experienced problems in supervising older workers. The respondents' level of education was indicated by three dummy variables: "low" (lower general or vocational training), "middle" (high school or intermediate level vocational training) and "high" (higher vocational training or university). Age is included as a continuous variable in number of years. To account for possible gender differences in stereotyping older workers, sex was included in the analysis ("0" male, "1" female). The question on which the latter variable is based is: "Did you experience problems in the past two years in supervising older workers (50 years and older)?" with answer categories (i) no, never; (ii) yes, sometimes; (iii) yes, often; and (iv) not relevant, I do not supervise older workers. To calculate the change in problems differences were calculated for managers having experience with older workers, generating the following categories: (i) stable level of problems; (ii) increase in problems; (iii) decrease in problems; and (iv) not relevant, no supervision experience with older workers.

#### (2) Firm characteristics.

To provide the context of the organizational setting we included the following variables: the percentage of higher educated, based on the question: "What percentage of the staff in your organization is higher educated (higher vocational training or university) with answer categories ten intervals of 10 percent to indicate this percentage; the percentage of older workers based on the question; "What percentage of the staff in your organization is 50 years or older? With answer categories ten intervals of 10 percent to indicate this percentage. And the level of physically demanding work based on the question "To what extent is the work of your employees physically demanding?"; with answer categories (i) not at all; (ii) to a weak extent; (iii) to some extent; (iv) to a large extent; (v) to a very large extent.

In Table 1 we list the descriptive statistics of variables used in the statistical analysis.

**Table 1: Descriptive statistics**

	Mean	Standard deviation
Hard skills 50+ (4-point scale) wave 1	2.12	0.45
Hard skills 50+ (4-point scale) wave 2	2.18	0.43
Soft skills 50+ (4-point scale) wave 1	2.68	0.56
Soft skills 50+ (4-point scale) wave 2	2.87	0.47
Age at wave 1 (in years)	47.08	10.32
Gender (male = 0)	0.29	0.45
Education level		
Low	0.14	0.35
Middle	0.35	0.48
High	0.51	0.50
Changes in problems with older workers past two years		
Same	0.54	0.50
Decreased	0.08	0.27
Increased	0.17	0.37
Not relevant (no older workers supervised)	0.22	0.41
Composition personnel		
% highly educated	0.49	0.22
% older workers (50 years and older)	0.37	0.15
Type of work (5-point scale)		
Physically demanding	2.31	1.15

### *Analyses*

In examining changes over time, we will first see whether there are significant changes to be traced in the individual skills of older workers as perceived by managers. As a second step we will explain changes in those skills over time by the use of a conditional change score model (Berrington, Smith, & Sturgis, 2006). The absolute change in the dependent variable  $y_{it}$  (i.e. the change in soft and hard skills) between wave 2 and wave 1 is explained as follows:

$$\Delta y_{it} = \beta y_{it-1} + \alpha_0 + \gamma x_i + \epsilon_i \quad (1)$$

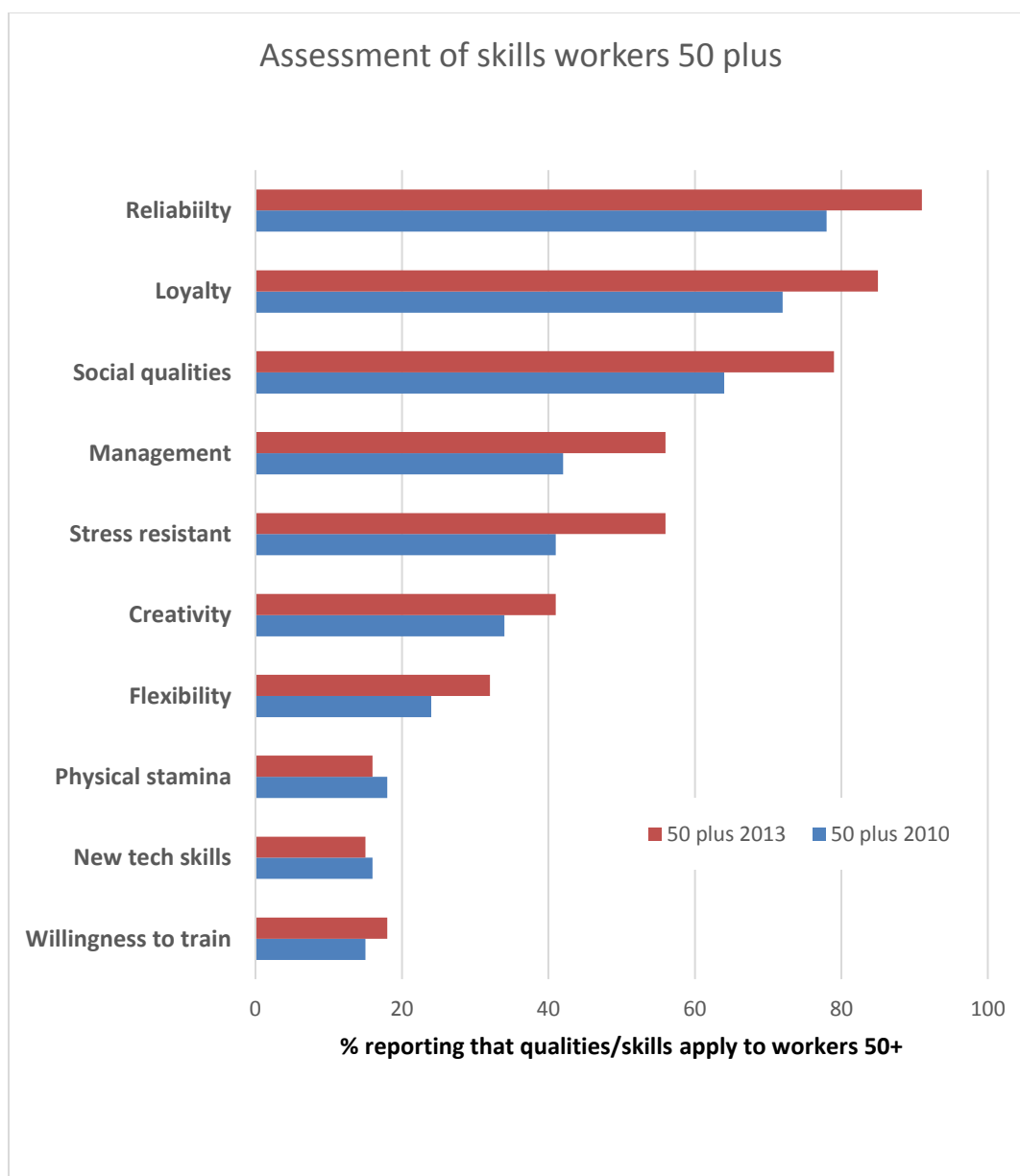
where the explanatory variables are the lagged dependent variable  $y_{it-1}$ , a constant and a set of explanatory variables  $x_i$  and an error term  $\epsilon_i$ . The variable  $y_{it-1}$  is included because the initial state of the dependent variable is often found to be negatively correlated with change, displaying the so-called ‘regression to the mean’ effect (Finkel, 1995). We tested for non-

linearity in the relationship between age and the assessment of changes in views about older workers by including an age squared term. This offers the opportunity to see whether an age-related change effect follows the inverted U-shape as commonly observed in the literature that studies age-productivity profiles (Skirbekk, 2004).

#### 4. Results

The assessment by managers of the skills of older workers of 50 years and older for both times of observation (2010 and 2013) is depicted in Figure 1.

**Figure 1: Assessment of skills of older workers (% (very much) agrees that presented skills applies to workers of 50 years and older) at two moments in time**



Two observations can be made with respect to the assessment of the skills of older workers as displayed in Figure 1. First, according to managers the comparative advantage of older workers are the soft skills, whereas hard skills are mentioned more sparingly as being a characteristic of older workers. Soft skills like reliability and loyalty belong to the domain of older workers, whereas the hard skills, offer a mixed outcome, although one can see that they have become more positive over time about the creativity and flexibility of older workers. Managers generally do not perceive trainability, new tech skills and physical stamina to be skills of older workers. A more formal test to detect statistical differences between the two periods in time is carried out in Table 2 and there one can see that the assessment of manager of older workers improves for 6 out of 10 skills. In particular, the soft skills show a marked improvement as perceived by the managers.

**Table 2: Changes in the assessment of individual skills between 2010 and 2013 by managers (30-65 years) of workers of 50 years and older**

Skills:	Item values at :		Significant difference
	t <sub>1</sub>	t <sub>2</sub>	t <sub>2</sub> – t <sub>1</sub>
Flexibility	2.11	2.18	0.07
Social skills	2.63	2.83	0.20**
Loyalty	2.76	3.00	0.24**
Creativity	2.23	2.33	0.10*
Management	2.29	2.49	0.20**
Reliability	2.89	3.08	0.19**
Willingness to train	1.89	1.92	0.03
Physical stamina	2.02	1.97	-0.05
Stress resistant	2.31	2.51	0.20**
New tech skills	1.94	1.92	-0.02

The items (4-point scale) were tested for significant differences across the two waves with \* p < 0.05; \*\* p < 0.01. The values were 1 = not or weakly applicable; 2 = somewhat applicable; 3 = to a strong extent applicable; 4 = to a very strong extent applicable

#### *Explaining changes in soft and hard skills*

But what are the driving forces behind those changes? The regression analyses (equation 1) to explain changes in perceived skills of older workers are presented in Table 3. In column (1) of

this table the results are presented for managers assessments of the so-called hard skills of older workers. In column (2) the results are presented for soft skills of older workers.

**Table 3: Explaining changes in attitudes of managers (between 30-65 years) towards older workers of 50 years and older**

	Change in hard skills		Change in soft skills	
	(1)		(2)	
	Coeff	t-value	Coeff	t-value
Dependent variable t-1	-0.76***	15.78	-0.86***	19.40
<i>Managers characteristics</i>				
Gender (male= 0)	0.02	0.37	0.02	0.26
Age	0.10***	3.30	0.08**	2.49
Age squared ( $\times 10^{-2}$ )	-0.09***	2.94	-0.07**	2.15
Education (low =0)				
Middle	-0.05	0.70	-0.01	0.08
High	-0.01	0.09	0.16**	2.06
Problems older workers past 2 years (stayed the same= 0)				
Decreased	-0.02	0.21	0.02	0.18
Increased	-0.16**	2.45	-0.17**	2.36
Did not supervise older Workers	-0.03	0.48	0.07	1.05
<i>Firm characteristics</i>				
Composition personnel				
% Highly educated	0.26**	2.30	0.20*	1.62
% Older workers	-0.07	0.47	0.02	0.14
Type of work (5-point scale)				
Physically demanding	-0.01	0.41	-0.02	0.68
Constant	-0.86	1.23	0.27	0.35
N	324		324	
Adj. R <sup>2</sup>	0.46		0.55	
RMSE	0.40		0.44	

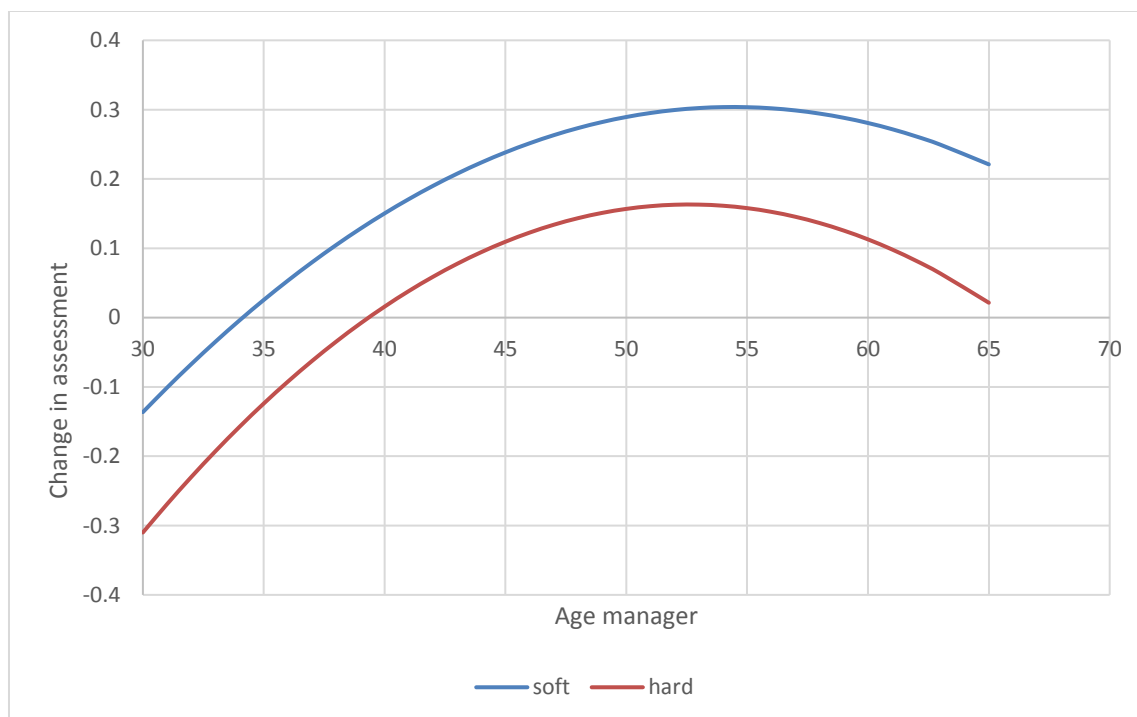
\* p < 0.10; \*\* p < 0.05; and \*\*\* p < 0.01

A number of conclusions can be drawn from the estimation results. First, in all equations there seems to be a substantial level of stability over time. Managers' assessments of the skills of older workers in 2010 is a strong predictor of their assessment three years later. Second, in all equations, the age of the manager is a significant predictor of attitude change toward older



workers. The significance of the both the linear age effect and the age-squared effect implies that the effect of age has an inverted U-shape across age. The highest positive impact on changes in ratings of older workers qualifications is found around the managers' age of 55: the positive change in assessment of the skills of older workers is highest for managers aged 53 (hard skills) and 54 (soft skills). This clearly suggests that the ingroup hypothesis is confirmed: as managers become older and become part of the age (in)group of 50 years and older, the more positive their assessment of the productive skills of older workers. However, because the effect has an inverted U-shape, it does not imply that the older the manager the better the assessment. Beyond the mid-50s the assessment is still positive but slowly declines

**Figure 2: Impact of the age of the manager on changes in assessment of the hard and soft skills of older workers (50+)**



Note: simulated curves are based on estimated coefficients in Table 3

Figure 2 illustrates the estimated U-curve for the managers between the age of 30 and 65 years old in their assessment of soft, respectively hard skills of 50-plus older workers. The upper line shows that the older the manager is, the more likely that a positive change in assessments of the soft skills of older workers will be observed. Importantly, among the lower

range of age categories we do not witness a positive change in assessment. The estimation results reveal that among managers below the age of 40, respectively 34, the change in assessments of hard, respectively soft skills is negative.

Besides the age effect of the manager making the assessment, it is also important whether the manager has experienced an increase in problems in supervising older workers. The effect of having problems with older workers has an asymmetric effect: a decrease in problems in with older workers does not generate a positive effect, whereas an increase of problems does. This suggests some kind of ratchet effect: it is very hard to redress a negative experience once it occurs.

Finally, the inclusion of firm contextual variables shows that the skill level of the organization has an impact on the assessment of hard and soft skills: the view of managers working in a higher educated organization is associated with a more positive change in the assessment of the productive skills of older workers. A possible reason for this is may be that in such work environments the type of work does not lead to a strong depreciation by age as it may be the case in a low skill-intensive work environments. The age structure of the personnel or the level of physically demanding work does not have a significant effect on the perceived changes in skills of older workers. Overall, it should be mentioned that the contribution of firm specific variables in addition to the manager specific variables is small. By carrying out a hierarchical regression analysis (not shown, available upon request), the additional explanatory variance of firm variables is 1 percentage point for both soft and hard skills.

## **5. Conclusions and Discussion**

Ageism - the use of stereotyping and discriminating against individuals or groups on the basis of their age – is perceived to be widespread (James, McKechnie, Swanberg, & Besen, 2013). Meta analyses contest the accuracy of these age stereotypes. For instance, Ng and Feldman (2012) show that of 11 stereotypes concerning older workers only the willingness to train seems to be the only one which is grounded in experience. Trying to change this state of affairs is not only in the interest of older workers themselves seeking work of willing to stay on working, but it may very well be in the interest of organizations which ‘write off’ human capital which still has productive potential. The current paper has tried to uncover the dynamics in attitudes towards older workers within a group of managers.

This paper presents three findings. First, individual managers have become more positive about a number of skills of older workers (aged 50 years and older). However, this change has mainly been restricted to soft skills and not so much the hard skills which are an important part of the demand of employers (Van Dalen et al., 2010b). Second, statistical analysis shows that the biggest influence on these changes is the manager's age and whether or not the manager has experienced problems at work with older workers. And third, we find that working environment has virtually no effect on the change in attitudes of managers in the period of observation. This suggests that images of older workers are quite uniformly distributed and not tied to, e.g., aging industries or sectors of industry where the work is physically demanding.

### *Discussion*

Registering changes in age stereotypes in a longitudinal setup is an important contribution because it sheds light on how hard-wired stereotypes really are. We show that within a relatively short time span changes can occur, but the main question that remains is why these changes occur. A robust answer might offer possibilities for intervention (Axelrad & James, 2016). The present study can only shed light on a number of factors that come into play of which the manager's age is the most important factor. Once a manager becomes older and starts belonging to the ingroup – the older worker – stereotypes may well start to change as a negative evaluation of older workers would implicitly reflect negatively on the assessor. Self-deprecation is not going to be widespread on such an important topic as the productive value of a worker.

An alternative mechanism that we would like to pose is that the source of information about older workers may also come from the process of learning about older workers. Young managers have by definition less experience than older managers and certainly when it comes to dealing with older workers. The factor age in that respect is an approximation of experience and that type of experience relies on observation. However, the type of learning may also come from within, i.e. by means of introspection. Managers or supervisors become more aware that skills do not depreciate as fast as common stereotypes about older workers claim they will depreciate. As one ages, one may better understand what workers can still do at higher ages and see where their comparative advantages exactly lie and this type of introspection is only available to the older manager, and hence the important role that age plays. Of course, real learning may also be generated by conflict at work. We have seen that

an increase in problems in supervising older workers (50 years and older) negatively impacts their skills.

Reducing age discrimination in the workplace is at the forefront of policy debates in most countries dealing with an aging workforce (Axelrad & James, 2016). Age stereotypes with respect to older workers play an important role in sustaining these practices. Over the past decades a large number of initiatives has been launched to combat age stereotypes, in particular among employers. Empirical evidence of notable changes in these stereotypes is largely absent in the international scientific literature. This paper is among the first that show that negative age stereotypes about older workers' productivity are declining. At the same time, the estimation results show that there is a high level of stability over a three-year period. This study is a first step in the analysis of changing views about older workers and even though we discovered that the work context may not have a large effect on the stereotypes that managers hold, this panel study shows that the age of the manager can have a substantial effect on reducing ageism. An important implication of this study is that provided that the group of employers ages as well - and under certain conditions this is likely (see Weil (1997) and Keyfitz and Caswell (2005)) - the prospects of older workers in an aging labor market will improve.

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